

Atty. Docket No.: 74120-301403  
Serial No.: 09/870,228

**AMENDMENT**

**In the Claims:**

**Amendment to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

Claims 1-12 (Cancelled).

13. (Currently Amended) A method of detecting network failures in a Voice over IP (VoIP) network, the method comprising:

producing a failure rate based on disconnect cause codes of from VOIP call usage records associated with VOIP call traffic handled by a particular VoIP network element for a given time interval;

determining if the failure rate exceeds a defined threshold; and

generating an alarm if it is determined that the failure rate exceeds the defined threshold.

14. (Original) A method of identifying network failures in a Voice over IP (VoIP) network comprising:

generating alarms from VoIP call usage records.

15. (Currently Amended) A computer program product residing on a computer readable medium for identifying network failures in a Voice over IP (VoIP) network, comprising instructions for causing a computer to:

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produce failure rate information based on disconnect cause codes of from VoIP call usage records associated with VOIP call traffic handled by a particular VoIP network element for a given time interval;

determine if the failure rate information exceeds a defined threshold; and

generate an alarm if it is determined that the failure rate information exceeds the defined threshold.

16. (New) A method of detecting network failures in a Voice over IP (VoIP) network, the method comprising:

receiving VoIP call usage records for VoIP call traffic passing through the VoIP network during a particular time period, wherein each of the VoIP call usage records identifies a disconnect cause code and one of a plurality of network elements responsible for reporting the disconnect cause code;

generating a list of each of the plurality of network elements identified by the VoIP call usage records;

determining for each of the plurality of network elements:

a number of instances of each disconnect cause code identified by the VoIP call usage records,

a number of instances of failure-type disconnect cause codes identified by the VoIP call usage records,

a sum of the number of instances of each disconnect cause code, and

a failure rate by dividing the number of instances of failure-type disconnect cause codes by the sum of the number of instances of each disconnect cause code;

comparing for each of the plurality of network elements:

the number of instances of failure-type disconnect cause codes with a first predetermined threshold, and

the failure rate with a second predetermined threshold; and

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producing alarm information for each of the plurality of network elements for which the number of instances of failure-type disconnect cause codes exceeds the first predetermined threshold or for which the failure rate exceeds the second predetermined threshold.

17. (New) The method of claim 16, further comprising:  
producing alarm information for each of the plurality of network elements for which the number of instances of failure-type disconnect cause codes exceeds the first predetermined threshold and for which the failure rate exceeds the second predetermined threshold.
18. (New) The method of claim 16, wherein the plurality of network elements is a plurality of gateways.
19. (New) The method of claim 16, wherein at least one of the plurality of network elements is a VoIP gateway.
20. (New) The method of claim 16, wherein the method of claim 1 is repeated for VoIP call usage records for VoIP call traffic passing through the VoIP network during a successive time period equal in length to the particular time period.
21. (New) The method of claim 16, further comprising generating an alarm based on the production of alarm information.
22. (New) The method of claim 21, wherein the alarm indicates each of the plurality of network elements for which alarm information has been produced.
23. (New) The method of claim 22, wherein the alarm further indicates the failure rate and the number of instances of failure-type disconnect cause codes for each of the plurality of network elements for which alarm information has been produced.

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24. (New) The method of claim 23, wherein the alarm further indicates the number of instances of each disconnect cause code for each of the plurality of network elements for which alarm information has been produced.

25. (New) The method of claim 21, wherein the alarm is one or more communications mechanisms selected from the group consisting of: an audible sound, an electronic report, an e-mail, a printed report, and a page.

26. (New) The method of claim 16, wherein the disconnect cause codes are ISDN disconnect cause codes.

27. (New) The method of claim 16, further comprising:  
sending the alarm information to a network operator to permit the network operator to obtain an ongoing, substantially real time picture of the failure rate and the number of instances of failure-type disconnect cause codes relating to particular network elements of the plurality of network elements.